

## AIR QUALITY PERMIT

Issued To: Bitter Creek Pipelines, LLC  
Consul 27 Battery  
Environmental Staff  
WBI Holdings, Inc.  
P.O. Box 131  
Glendive, MT 59330

Permit: #3298-01  
Administrative Amendment (AA) Request  
Received: 04/27/05  
Department's Decision on AA: 06/17/05  
Permit Final: 07/06/05  
AFS: #003-0022

An air quality permit, with conditions, is hereby granted to Bitter Creek Pipelines, LLC - Consul 27 Battery natural gas compressor station (BCPL) pursuant to Sections 75-2-204 and 211, Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### Section I: Permitted Facilities

#### A. Permitted Equipment

BCPL operates the Consul 27 Battery natural gas compressor station (consisting of up to six natural gas compressor engines utilizing "lean-burn" technology with catalytic oxidation units and a combined total maximum rated design capacity not to exceed 2400 horsepower (hp)) at the NW ¼ of Section 27, Township 9 South, Range 40 East, Big Horn County, Montana. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

#### B. Current Permit Action

On April 27, 2005, the Montana Department of Environmental Quality (Department) received a request from WBI Holdings, Inc., on behalf of BCPL to write the permit in a de minimis friendly manner. The facility, located near Decker, Montana, would be allowed to operate up to six natural gas compressor engines utilizing "lean-burn" technology with catalytic oxidation units and a combined total maximum rated design capacity not to exceed 2400 hp. The permit will also be updated to reflect the current permit language and rule references used by the Department.

### Section II. Conditions and Limitations

#### A. Emission Limitations

1. BCPL shall not operate more than six "lean-burn" natural gas compressor engines at any given time. The maximum rated design capacity of the engines shall not exceed 2400 hp total (ARM 17.8.749).
2. Each compressor engine shall be a natural gas compressor engine controlled by "lean-burn" technology with a catalytic oxidation unit. The pound per hour (lb/hr) limits for each of the engines shall be determined using the following equation and pollutant specific grams per horsepower-hour (g/hp-hr) emission factors (ARM 17.8.752):

### Equation

Emission Limit (lb/hr) = Emission Factor (g/hp-hr) \* maximum rated design capacity of engine (hp) \* 0.002205 lb/g.

NO <sub>x</sub> <sup>1</sup>	1.0 g/hp-hr
CO	0.5 g/hp-hr
VOC	0.5 g/hp-hr

3. BCPL shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).
4. BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
5. BCPL shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.749).

### B. Testing Requirements

1. Compressor Engines #1, #2, and #3 shall be tested for NO<sub>x</sub> and CO, concurrently (on an every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department), to demonstrate compliance with the emission limits in Section II.A.2 (ARM 17.8.105 and ARM 17.8.749).
2. Compressor Engines #4, #5, and #6 shall be initially tested for NO<sub>x</sub> and CO, concurrently, within 180 days of the initial start up date of each compressor engine and on an every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department, to demonstrate compliance with the emission limits in Section II.A.2 (ARM 17.8.105 and ARM 17.8.749).
3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

### C. Operational Reporting Requirements

1. BCPL shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis. Production information shall be gathered on a calendar-year basis, and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to

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<sup>1</sup> NO<sub>x</sub> reported as NO<sub>2</sub>.

calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. BCPL shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by BCPL as a permanent business record for at least five years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

#### D. Notification

BCPL shall provide the Department (both the Billings regional office and the Helena office) with written notification of the following information within the specified time periods (ARM 17.8.749):

1. Commencement of construction of units #3-6 within 30 days after the commencement of construction.
2. Actual start-up date of units #3-6 within 15 days after the actual start-up date of each respective engine.

### SECTION III: General Conditions

- A. Inspection – BCPL shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if BCPL fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.

- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BCPL may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

Permit Analysis  
Bitter Creek Pipelines, LLC  
Consul 27 Battery  
Permit #3298-01

I. Introduction/Process Description

Bitter Creek Pipelines, LLC (BCPL) is permitted for the construction and operation of the Consul 27 Battery natural gas compressor station. The facility is a natural gas compressor station located near the town of Decker, in the NW ¼ of Section 27, Township 9 South, Range 40 East, Big Horn County, Montana.

A. Permitted Equipment

The facility consists of the following equipment:

1. (Up to 6) Natural gas fired compressor engines with “lean-burn” technology and catalytic oxidation emissions control units with a combined total maximum rated design capacity of up to 2400 horsepower (hp).
2. (1) Natural gas fired heater with a maximum rated design capacity of up to 2.21 million British thermal units per hour (MMBtu/hr).

B. Source Description

The purpose of the BCPL – Consul 27 Battery natural gas compressor station is to compress natural gas for transmission through the natural gas pipeline. The compression of the gas is accomplished with the compressor engines listed in Section I.A of the permit analysis.

C. Permit History

**Permit #3298-00** was issued to BCPL for the construction and operation of the Consul 27 Battery natural gas compressor station, consisting of six 400-hp catalytic oxidation controlled Waukesha F18GL engines and one natural gas fired heater (up to 2.21 MM Btu/hr). Permit #3298-00 became final on March 24, 2004.

D. Current Permit Action

On April 27, 2005, the Montana Department of Environmental Quality (Department) received a request from WBI Holdings, Inc. on behalf of BCPL to write the permit in a de minimis friendly manner. The facility, located near Decker, Montana, would be allowed to operate up to six “lean-burn” natural gas compressor engines with catalytic oxidation units and a combined total maximum rated design capacity not to exceed 2400 hp. The permit will also be updated to reflect the current permit language and rule references used by the Department. **Permit #3298-01** will replace Permit #3298-00.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

## II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

### A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this subchapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

BCPL shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than four hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

### B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

BCPL must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. (1) This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. BCPL will burn natural gas in all fuel burning equipment, which will meet this limitation.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAPs) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH.

Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by BCPL, the Consul 27 Battery natural gas compressor station is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. In addition, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit) as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Based on the information submitted by BCPL, the Consul 27 Battery natural gas compressor station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPS.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.402 Requirements. BCPL must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The height of the stack for BCPL is below the allowable 65-meter GEP stack height.

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. BCPL was not required to submit an application fee because the current permit action is considered administrative.



2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. BCPL has a PTE greater than 25 tons per year of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and Volatile Organic Compounds (VOC); therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. BPLC was not required to submit a permit application for the current permit action because the change is considered administrative. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. BCPL was not required to submit a public notice for the current permit action because the change is considered administrative.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than one year after the permit is issued.
13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
  - a. PTE > 100 tons/year of any pollutant;
  - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>) in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 require that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3298-01 for BCPL, the following conclusions were made:
  - a. The facility's PTE is less than 100 tons/year for any pollutant.
  - b. The facility's PTE is less than 10 tons/year for and one HAP and less than 25 tons/year for all HAPs.
  - c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
  - d. This facility is not subject to any current NSPS.
  - e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.
  - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
  - g. This source is not an Environmental Protection Agency (EPA) designated Title V source.

Based on these facts, the Department determined that BCPL Consul 27 Battery natural gas station would be a minor source of emissions as defined under Title V.

### III. BACT Determination

A BACT determination is required for each new or altered source. BCPL shall install on the new or altered source the maximum air pollution control that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required for the current permit action because the current permit action is considered an administrative permit action.

### IV. Emission Inventory

Source	Ton/year					
	PM <sub>10</sub>	NO <sub>x</sub>	VOC	CO	SO <sub>x</sub>	HCHO
(Up to 6 – Units #1-#6) “Lean-Burn” Compressor Engines with a Combined Total Maximum Rated Design Capacity of up to 2400 hp	.007	23.18	11.59	11.59	.053	4.73
(1 – Unit #7) Heater with a Maximum Rated Design Capacity of up to 2.21 Million British Thermal Units Per Hour (MMBtu/hr)	.075	0.97	0.05	0.81	.006	0.00
<b>Total</b>	<b>0.08</b>	<b>24.15</b>	<b>11.64</b>	<b>12.40</b>	<b>0.06</b>	<b>4.73</b>

#### **(Up to 6 – Units #1-#6) “Lean-Burn” Compressor Engines with a Combined Total Maximum Rated Design Capacity of up to 2400 hp**

Brake Horsepower: 2400 hp (Up to a Maximum Total Design Capacity)

Hours of operation: 8760 hr/yr

#### PM<sub>10</sub> Emissions

Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)

Fuel Consumption: 20.40 MMBtu/hr (Maximum Design)

Calculations: 20.40 MMBtu/hr \* 7.71E-05 lb/MMBtu = 0.00016 lb/hr  
0.00016 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.007 ton/yr

#### NO<sub>x</sub> Emissions

Emission factor: 1.00 gram/hp-hour (BACT Determination)

Calculations: 1.00 gram/hp-hour \* 2400 hp \* 0.002205 lb/gram = 5.29 lb/hr  
5.29 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 23.18 ton/yr

#### VOC Emissions

Emission factor: 0.50 gram/hp-hour (BACT Determination)

Calculations: 0.50 gram/hp-hour \* 2400 hp \* 0.002205 lb/gram = 2.65 lb/hr  
2.65 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 11.59 ton/yr

#### CO Emissions

Emission factor: 0.50 gram/hp-hour (BACT Determination)

Calculations: 0.50 gram/hp-hour \* 2400 hp \* 0.002205 lb/gram = 2.65 lb/hr  
2.65 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 11.59 ton/yr

#### SO<sub>2</sub> Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
Fuel Consumption: 20.40 MMBtu/hr (Maximum Design)  
Calculations:  $20.40 \text{ MMBtu/hr} * 5.88\text{E-}04 \text{ lb/MMBtu} = 0.012 \text{ lb/hr}$   
 $0.012 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.053 \text{ ton/yr}$

#### Formaldehyde (HCOH) Emissions

Emission factor:  $1.80\text{E-}01 \text{ lb/hr} * 6 = 1.08 \text{ lb/hr}$  (Company Information)  
Calculations:  $1.08 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 4.73 \text{ ton/yr}$

#### **(1 – Unit #7) Heater with a Maximum Rated Design Capacity of up to 2.21 Million British Thermal Units Per Hour (MMBtu/hr)**

Heat Output: 2.21 MMBtu/hr (Maximum Design)  
Hours of Operation: 8760 hr/yr  
Fuel Heating Value: 0.001 MMScf/MMBtu  
Fuel Consumption:  $2.21 \text{ MMBtu/hr} * 0.001 \text{ MMScf/MMBtu} * 8760 \text{ hr/yr} = 19.36 \text{ MMScf/yr}$

#### PM<sub>10</sub> Emissions

Emission Factor: 7.71 lb/MMScf (AP-42, Table 1.4-1, 7/00)  
Calculations:  $7.71 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.075 \text{ ton/yr}$

#### NO<sub>x</sub> Emissions

Emission factor: 100.00 lb/MMScf (AP-42, Table 1.4-1, 7/00)  
Calculations:  $100.00 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.97 \text{ ton/yr}$

#### VOC Emissions

Emission factor: 5.50 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $5.50 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.05 \text{ ton/yr}$

#### CO Emissions

Emission factor: 84.00 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $84.00 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.81 \text{ ton/yr}$

#### SO<sub>2</sub> Emission

Emission factor: 0.60 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $0.60 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.006 \text{ ton/yr}$

#### HCOH Emission

Emission factor: 0.075 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $0.075 \text{ lb/MMScf} * 19.36 \text{ MMScf/yr} * 0.0005 \text{ ton/lb} = 0.0007 \text{ ton/yr}$

#### V. Existing Air Quality

The BCPL Consul 27 Battery compressor station is located in the NW ¼ of Section 27, Township 9 South, Range 40 East, in Big Horn County, Montana. Big Horn County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

## VI. Ambient Air Impact Analysis

The Department determined, based on ambient air quality modeling, that the impact from the previous permitting action and the current permitting action will be minor. The Department believes the current permitting action will not cause or contribute to a violation of any ambient air quality standard.

Aspen Consulting & Engineering (Aspen) previously conducted air quality modeling for the BCPL Consul 27 Battery natural gas compressor station as part of the original BCPL air quality permit application. The modeling was done to demonstrate compliance with the National and Montana Ambient Air Quality Standards (MAAQS). In addition, although a New Source Review (NSR) - Prevention of Significant Deterioration of Air Quality (PSD) increment analysis was not required for this permitting action, the Department requested BCPL complete a PSD increment analysis. Due to the increased coal-bed methane projects, the Department determined that NO<sub>x</sub> increment modeling was necessary to track the effects of industry growth in this area.

The Environmental Protection Agency (EPA) approved Industrial Source Complex (ISC3) model and 5 years of meteorological data (1984 and 1987 through 1990) were utilized for the air quality model. The surface data was collected from Sheridan, Wyoming (MET Station #24029), and the upper air data was collected from Lander, Wyoming (MET Station #24021). The receptor grid elevations were derived from digital elevation model (DEM) files using the United States Geological Survey (USGS) 7.5-minute series (1:24,000 scale) digitalized topographic maps. The Decker, Holmes Ranch, and Pearl School, Montana quadrangles and the Acme, Bar-N-Draw, and Cedar Canyon, Wyoming quadrangles were used to determine the receptor grid. The receptors were placed along the facility fence line at no more than 50-meter (m) intervals. A Cartesian receptor grid was developed outside the fence line boundary. Receptors were spaced at 100-meters for a distance of 1 km from the fence line. Receptors were spaced at 250-meters for distances of 1 km to 3 km from the fence line. Receptors were spaced at 500-meters for distances of 3 km to 10 km from the fence line. All receptors were placed using Universal Transverse Mercator (UTM) coordinates. Building downwash was calculated using the EPA Building Profile Input Program (BPIP). The building corner coordinates and peak roof heights were provided by a BCPL plot plan submitted as part of the air quality permit application and were used to determine the appropriate direction-specific building dimension parameters to use for each emission source evaluated in the model.

Each NO<sub>x</sub> emitting unit from BCPL's Consul 27 Battery natural gas compressor station as well as area NO<sub>x</sub> sources in Montana and Wyoming were input into the air dispersion model. The emissions of total NO<sub>x</sub> (NO + NO<sub>2</sub>) from each source were assumed as the basis for the model. As show in Table 1, the modeled concentrations are well below the NAAQS/MAAQS. The Ambient Ratio Method and the Ozone Limiting Method were applied to the NO<sub>x</sub> emissions to convert the modeled concentrations to NO<sub>2</sub> for comparison to the NAAQS/MAAQS. The model results for NO<sub>x</sub> are summarized in Table 1.

Table 1. Ambient Modeling Results								
Pollutant	Avg. Period	NO <sub>x</sub> Modeled Conc. (µg/m <sup>3</sup> )	OLM/arm Adjusted to NO <sub>2</sub> (µg/m <sup>3</sup> )	Background Conc. (µg/m <sup>3</sup> )	Ambient Conc. (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	MAAQS (µg/m <sup>3</sup> )	% of NAAQS/MAAQS
NO <sub>2</sub>	1-hr	233.2	211.2	75	286.2	-----	564	---- / 50.7
	Annual	7.0	5.2	6	11.2	100	94	11.2 / 12.0

<sup>a</sup> Concentration calculated using OLM

<sup>b</sup> Applying the Ambient Ratio Method with national default of 75%

Although a PSD increment analysis was not required by the ARM, due to the high projected development of coal bed methane in Montana, the Department requested that BCPL demonstrate compliance with PSD increments for NO<sub>x</sub>. Therefore, a Class II increment analysis was conducted. The modeling demonstrated compliance with the Class II increments. The Class II modeling results are summarized in Table 2.

<b>Table 2. Class II Modeling Results</b>				
<b>Pollutant</b>	<b>Avg. Period</b>	<b>Class II Modeled Conc. (µg/m<sup>3</sup>)</b>	<b>Class II Increment (µg/m<sup>3</sup>)</b>	<b>% Class II Increment Consumed</b>
NO <sub>x</sub>	Annual <sup>a</sup>	5.2	25	21.0

<sup>a</sup> Applying the Ambient Ration Method with national default of 75%

In summary, modeling was conducted to determine compliance with the MAAQS, the NAAQS, and the NO<sub>x</sub> PSD increments. The modeling results demonstrated that neither the MAAQS nor the NAAQS would be violated. In addition, the PSD increment analysis for NO<sub>x</sub> demonstrated that the Class II NO<sub>x</sub> increment would not be exceeded.

#### VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

#### VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Permit Analysis Prepared By: Ron Lowney

Date Prepared: June 1, 2005